

Set Name Query
side by side

Hit Count Set Name
result set

DB=DWPI; PLUR=YES; OP=ADJ

<u>L19</u>	active matrix with (nematic or ferroelectric)	258	<u>L19</u>
<u>L18</u>	L9 and matrix	0	<u>L18</u>
<u>L17</u>	L9 and active	4	<u>L17</u>

DB=USPT,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ

<u>L16</u>	wo-9923074-\$.did.	5	<u>L16</u>
<u>L15</u>	gb-2310669-\$.did.	2	<u>L15</u>
<u>L14</u>	de-19607996-\$.did.	1	<u>L14</u>
<u>L13</u>	de-19611096-\$.did.	1	<u>L13</u>
<u>L12</u>	de-19652250-\$.did.	1	<u>L12</u>
<u>L11</u>	US-6159392-\$.did.	2	<u>L11</u>
<u>L10</u>	de-19652247-\$.did.	1	<u>L10</u>
<u>L9</u>	US-6491989-\$.did.	5	<u>L9</u>
<u>L8</u>	de-19748440-\$.did.	2	<u>L8</u>
<u>L7</u>	US-6491989-\$.did.	5	<u>L7</u>
<u>L6</u>	de-19748438-\$.did.	2	<u>L6</u>
<u>L5</u>	US-4391731-\$.did.	2	<u>L5</u>
<u>L4</u>	jp-57054130-\$.did.	1	<u>L4</u>
<u>L3</u>	jp-60199878-\$.did.	2	<u>L3</u>
<u>L2</u>	jp-06256284-\$.did.	2	<u>L2</u>
<u>L1</u>	jp-06279321-\$.did.	2	<u>L1</u>

END OF SEARCH HISTORY

WEST**Freeform Search****Database:**

US Patents Full-Text Database
US Pre-Grant Publication Full-Text Database
JPO Abstracts Database
EPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Term:**Display:** **Documents in Display Format:** **Starting with Number** **Generate:** ☐ Hit List ☒ Hit Count ☐ Side by Side ☐ Image

Search History

DATE: Monday, June 30, 2003 [Printable Copy](#) [Create Case](#)

WEST**End of Result Set**☐ **Generate Collection** **Print**

L1: Entry 2 of 2

File: DWPI

Oct 4, 1994

DERWENT-ACC-NO: 1994-354667

DERWENT-WEEK: 199444

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: 2-alkyl-6-substd.-1,2,3,4-tetra:hydro:naphthalene derivs. used for liq. crystal compsns. - have low viscosity, small refractive index, physical and chemical stability and good compatibility with other liq. crystal cpds.

PRIORITY-DATA: 1993JP-0041516 (March 2, 1993)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 06279321 A	October 4, 1994		014	C07C013/48

INT-CL (IPC): C07C 13/48; C07C 23/18; C07C 25/18; C07C 41/09; C07C 43/20; C07C 67/08; C07C 69/75; C07C 69/92; C07C 69/94 ; C07C 253/30; C07C 255/50; C07C 255/54; C07C 255/55; C07C 327/26; C07D 239/36; C09K 19/32; C09K 19/34

ABSTRACTED-PUB-NO: JP 06279321A

BASIC-ABSTRACT:

A 2-alkyl-6-substd.-1,2,3,4-tetrahydronaphthalene deriv. of formula (I) is new.: In (I), R1 = opt. substd. 1-14C alkyl, alkoxy or acryloxy, halogen or cyano; R2 = opt. substd. 1-14C alkyl; rings A and B = opt. substd. 1,4-benzyl, 2,5 and 5,2-pyrimidinyl or 1,4-cyclohexyl; X,Y = single bond, (thio)ester bond, methyleneoxy bond or oxymethylene bond; m = 0, 1 or 2; n = 0, 1 or 2; m = n = 0; when n = 0, at least one of X and Y = single bond.

Also claimed are liq. crystal compsns. contg. at least one of the derivs. of formula (I).

USE/ADVANTAGE - The derivs. have low viscosity, a small refractive index, physical and chemical stability and compatibility with other liq. crystal cpds., show the stable nematic phase and are useful as materials to improve properties of liq. crystal compsns., e.g., to raise the N-I point. The liq. crystal compsns. are useful for liq. crystal flat panel displays.

WEST

Generate Collection

Print

L3: Entry 1 of 2

File: JPAB

Oct 9, 1985

PUB-NO: JP360199878A

DOCUMENT-IDENTIFIER: JP 60199878 A

TITLE: 6-SUBSTITUTED-2-(5-SUBSTITUTED-2-PYRIMIDINYL)-1,2,3,4- TETRAHYDRONAPHTHALENE

PUBN-DATE: October 9, 1985

INVENTOR-INFORMATION:

NAME

COUNTRY

SUGIMORI, SHIGERU

ISOYAMA, TOYOSHIROU

GOTO, YASUYUKI

US-CL-CURRENT: 544/242

INT-CL (IPC): C07D 239/26; C07D 239/28; C09K 19/34; C09K 19/42

ABSTRACT:

NEW MATERIAL: A compound of formula I (R1 is 1-sim;10C alkyl and alkoxy; R2 is cyano, 1-sim;10C alkyl).

EXAMPLE: 6-Pentyloxy-2-(5-propyl-2-pyrimidinyl)-1,2,3,4-tetrahydronaphthalene.

USE: A component of liquid crystal composition: it shows good compatibility to other liquid crystal compounds and the use of a small amount added can lower the driving voltage of liquid crystal display elements.

PREPARATION: 6-Substituted-1,2,3,4-tetrahydronaphthalene-2-carbonitrile of formula II is allowed to react with gaseous hydrogen chloride in an alcohol solvent to form a compound of formula III and the product is allowed to react with gaseous ammonia in an alcohol solvent to give an amidine hydrochloride derivative of formula IV. The condensation reaction of the compound with an acrolein derivative of formula V is carried out in the presence of a base catalyst such as sodium hydroxide to give the compound of formula I.

COPYRIGHT: (C)1985, JPO&Japio

WEST

End of Result Set

Generate Collection

Print

L12: Entry 1 of 1

File: DWPI

Jun 18, 1998

DERWENT-ACC-NO: 1998-334290

DERWENT-WEEK: 200206

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: New 1,1,5,7-tetra:fluoro-1,2,3,4-tetra:hydro:naphthalene derivatives - suitable for ferroelectric liquid crystal mixture, especially for display operating in inverse mode, to increase negative dielectric anisotropy

INVENTOR: MANERO, J; SCHMIDT, W

PRIORITY-DATA: 1996DE-1052250 (December 16, 1996)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 19652250 A1	June 18, 1998		018	C07C043/225
DE 59705589 G	January 10, 2002		000	C09K019/32
WO 9827179 A1	June 25, 1998	G	000	C09K019/32
EP 944690 A1	September 29, 1999	G	000	C09K019/32
EP 944690 B1	November 28, 2001	G	000	C09K019/32

INT-CL (IPC): C07 C 25/22; C07 C 25/24; C07 C 43/17; C07 C 43/192; C07 C 43/225; C07 C 69/035; C07 C 69/75; C07 D 213/30; C07 D 213/64; C07 D 303/02; C07 D 325/00; C07 D 405/10; C07 F 7/08; C07 F 7/10; C09 K 19/32; C09 K 19/34; C09 K 19/40; G09 F 9/35

ABSTRACTED-PUB-NO: DE 19652250A

BASIC-ABSTRACT:

1,1,5,7-Tetrafluoro -1,2,3,4-tetrahydro naphthalene derivatives of formula (I) are new: B = a 1,1,5,7-tetrafluoro -1,2,3,4-tetrahydro -2,6-naphthylene group of the formula; R1, R2 = (a) 1-20 carbon (C) alkyl (with or without asymmetric C atom), in which (a1) one or more non-adjacent and non-terminal methylene (-CH2-) groups may be replaced by oxygen (-O-), sulphur (-S-), carbonyloxy (-CO-O-), oxycarbonyl (-O-CO-), oxycarbonyloxy (-O-CO-O-) or trimethylsilyl (-Si(CH3)2-), (a2) one or more CH2 groups may be replaced by ethenylene (-CH=CH-), ethynylene (-C triple bond C-), cyclopropan-1,2-diyl, 1,4-phenylene (Phe), 1,4-cyclohexylene or 1,3-cyclopentylene, (a3) one or more H atoms may be replaced by fluorine (F) and/or chlorine (Cl) and/or (a4) the terminal methyl (CH3) group may be replaced by a chiral (optically active or racemic) group of formulae (IIA-R); or (b) one of R1, R2 = hydrogen (H); in which R = Cl, F, cyano (CN) or CH3; R3-7 = (a) H; (b) 1-16 C alkyl (with or without asymmetric C atom), in which (b1) one or more non-adjacent and non-terminal methylene (-CH2-) groups may be replaced by -O- and/or (b2) one or two CH2 groups may be replaced by -CH=CH-; (c) if attached to an oxiran, dioxolan, tetrahydrofuran, tetrahydropyran, butyrolactone or valerolactone system, R4R5 may = -(CH2)4- or -(CH2)5-; M1-4 = -CO-O-, -O-CO-, -O-CO-O-, -CO-S-, -S-CO-, -CS-O-, -O-CS-, -S-CS-S-, -O-CS-O-, -S-CO-S-, -CS-, -CH2-O-, -O-CH2-, -CH2-S-, -S-CH2-, -CH=CH-, -C triple bond C-, -CH2-CH2-CO-O-, -O-CO-CH2-CH2- or a single bond; A1-4 = (a) Phe, pyridin-2,5-diyl or naphth-2,6-diyl, in which 1 or more H atoms may be replaced by F, Cl and/or CN; pyrazin-2,5-diyl, pyridazin-3,6-diyl, pyrimidin-2,5-diyl, cyclohexylene or thiophen-2,5-diyl, in which 1 or 2 H atom(s) may be replaced by F, Cl and/or CN; (1,3,4)-thiadiazol-2,5-diyl, 1,3-dioxan-2,5-diyl or 1,3-dithian-2,5-diyl; 1,3-thiazol-2,4- or -2,5-diyl or thiopheny-2,4-diyl, in which

one H atoms may be replaced by F, Cl and/or CN; or 1,3-dioxaborinan-2,5-diyl; a, b, c, d = 0 or 1, provided that (I) does not contain mre than 4 ring systems with 5 or more members.

Also claimed are (i) a liquid crystal (LC) mixture, especially a ferroelectric LC mixture, containing compound(s) (I); and (ii) ferroelectric switches and displays containing the ferroelectric LC mixture, especially for operation in the inverse mode.

USE - (I) are used as components of LC mixtures. They have a wide range of applications, e.g. as base material for LC phases or for optimising the properties of other classes of compound, e.g. the dielectric anisotropy, birefringence, threshold voltage and/or viscosity. Even small amounts of (I) cause a negative shift in the dielectric anisotropy of mixtures. The mixtures are also useful in electrooptical or completely optical devices, e.g. displays, including computer and (colour) television displays, switches, light modulators, data and/or signal processors or generally in nonlinear optics. They are also suitable for field treatment, i.e. operation in quasi-bookshelf geometry.

ADVANTAGE - The property profile of (I) is very suitable for use in ferroelectric LC displays, especially in inverse mode.
ABSTRACTED-PUB-NO:

EP 944690B EQUIVALENT-ABSTRACTS:

1,1,5,7-Tetrafluoro -1,2,3,4-tetrahydro naphthalene derivatives of formula (I) are new: B = a 1,1,5,7-tetrafluoro -1,2,3,4-tetrahydro -2,6-naphthylene group of the formula; R₁, R₂ = (a) 1-20 carbon (C) alkyl (with or without asymmetric C atom), in which (a1) one or more non-adjacent and non-terminal methylene (-CH₂-) groups may be replaced by oxygen (-O-), sulphur (-S-), carbonyloxy (-CO-O-), oxycarbonyl (-O-CO-), oxycarbonyloxy (-O-CO-O-) or trimethylsilyl (-Si(CH₃)₂-), (a2) one or more CH₂ groups may be replaced by ethenylene (-CH=CH-), ethynylene (-C triple bond C-), cyclopropan-1,2-diyl, 1,4-phenylene (Phe), 1,4-cyclohexylene or 1,3-cyclopentylene, (a3) one or more H atoms may be replaced by fluorine (F) and/or chlorine (Cl) and/or (a4) the terminal methyl (CH₃) group may be replaced by a chiral (optically active or racemic) group of formulae (IIA-R); or (b) one of R₁, R₂ = hydrogen (H); in which R = Cl, F, cyano (CN) or CH₃; R₃-7 = (a) H; (b) 1-16 C alkyl (with or without asymmetric C atom), in which (b1) one or more non-adjacent and non-terminal methylene (-CH₂-) groups may be replaced by -O- and/or (b2) one or two CH₂ groups may be replaced by -CH=CH-; (c) if attached to an oxiran, dioxolan, tetrahydrofuran, tetrahydropyran, butyrolactone or valerolactone system, R₄R₅ may = -(CH₂)₄- or -(CH₂)₅-; M₁-4 = -CO-O-, -O-CO-, -O-CO-O-, -CO-S-, -S-CO-, -CS-O-, -O-CS-, -S-CS-S-, -O-CS-O-, -S-CO-S-, -CS-, -CH₂-O-, -O-CH₂-, -CH₂-S-, -S-CH₂-, -CH=CH-, -C triple bond C-, -CH₂-CH₂-CO-O-, -O-CO-CH₂-CH₂- or a single bond; A₁-4 = (a) Phe, pyridin-2,5- diyl or naphth-2,6-diyl, in which 1 or more H atoms may be replaced by F, Cl and/or CN; pyrazin-2,5-diyl, pyridazin-3,6-diyl, pyrimidin-2,5-diyl, cyclohexylene or thiophen-2,5-diyl, in which 1 or 2 H atom(s) may be replaced by F, Cl and/or CN; (1,3,4)-thiadiazol-2,5-diyl, 1,3-dioxan-2,5-diyl or 1,3-dithian-2,5-diyl; 1,3-thiazol-2,4- or -2,5-diyl or thiopheny-2,4-diyl, in which one H atoms may be replaced by F, Cl and/or CN; or 1,3-dioxaborinan-2,5-diyl; a, b, c, d = 0 or 1, provided that (I) does not contain mre than 4 ring systems with 5 or more members.

Also claimed are (i) a liquid crystal (LC) mixture, especially a ferroelectric LC mixture, containing compound(s) (I); and (ii) ferroelectric switches and displays containing the ferroelectric LC mixture, especially for operation in the inverse mode.

USE - (I) are used as components of LC mixtures. They have a wide range of applications, e.g. as base material for LC phases or for optimising the properties of other classes of compound, e.g. the dielectric anisotropy, birefringence, threshold voltage and/or viscosity. Even small amounts of (I) cause a negative shift in the dielectric anisotropy of mixtures. The mixtures are also useful in electrooptical or completely optical devices, e.g. displays, including computer and (colour) television displays, switches, light modulators, data and/or signal

processors or generally in nonlinear optics. They are also suitable for field treatment, i.e. operation in quasi-bookshelf geometry.

ADVANTAGE - The property profile of (I) is very suitable for use in ferroelectric LC displays, especially in inverse mode.

WEST

End of Result Set

☐ Generate Collection Print

L13: Entry 1 of 1

File: DWPI

Sep 25, 1997

DERWENT-ACC-NO: 1997-472156

DERWENT-WEEK: 199749

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Electro-optical LCD for in-plane switching display - contains liquid crystal medium with positive dielectric anisotropy

INVENTOR: POETSCH, E; SCHULER, B ; TARUMI, K

PRIORITY-DATA: 1996DE-1011096 (March 21, 1996)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 19611096 A1	September 25, 1997		017	C09K019/06
JP 09255956 A	September 30, 1997		016	C09K019/42

INT-CL (IPC): C07 C 25/18; C07 C 43/225; C07 C 69/773; C07 C 255/50; C07 C 331/28; C09 K 19/06; C09 K 19/42; C09 K 19/46 ; G02 F 1/13; G09 F 9/35

ABSTRACTED-PUB-NO: DE 19611096A

BASIC-ABSTRACT:

An electro-optical liquid crystal display, having a layer for re-orienting the liquid crystals that has a field with a significant component parallel to the liquid crystal layer. The display contains a liquid crystal medium with a positive dielectric anisotropy, containing at least one compound of formula (I) and at least one compound of formula (II): (where, R1, R1' = H or 1-15C alk(en)yl optionally substituted with a single CN or CF3 group or with at least one halogen atom, and optionally containing one or more non-adjacent CH2 groups replaced by O, S, 1,3-cyclobutyl, CO, -CO-O-, -O-CO- or -O-CO-O- ; A1-A2' = trans-1,4-cyclohexylene (optionally containing one or more non-adjacent CH2 groups replaced by O and/or S, and optionally substituted with 1-2 F atoms), 1,4-phenylene (optionally containing 1-2 CH groups replaced by N and optionally substituted with 1-2 F atoms), 1,4-cyclohexenylene, 1,4-bicyclo(2,2,2)-octylene, piperidine-1,4-diyl, (decahydro)naphthalene-- 2,6-diyl or 1,2,3,4-tetrahydronaphthalene-2,6-diyl ; Z1-Z2' = -CO-O-, -O-CO-, -CH2-O-, -OCH2-, -CH2CH2-, -CH=CH-, -C=CH- (alkyne bond) or a single bond, and one of Z1-Z2' may also be -(CH2)4- or -CH=CH-CH2CH2- ; X, Y = F, Cl, fluoroalk(en)yl or fluoroalkoxy; and l, m = 0-2). Also claimed other are liquid crystal mediums with positive dielectric anisotropy.

USE - Used as in-plane-switching (IPS) displays or as matrix display elements based on poly-Si TFT or MIM.

ADVANTAGE - Reduced switching times and swell voltages compared with earlier IPS displays.

WEST

Generate Collection

Print

Search Results - Record(s) 1 through 1 of 1 returned.☐ 1. Document ID: DE 19607996 A1

L14: Entry 1 of 1

File: DWPI

Sep 11, 1997

DERWENT-ACC-NO: 1997-458530

DERWENT-WEEK: 199743

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Stable liquid crystalline or mesogenic 3-fluoro-cyclohexenyl derivatives - with relatively low viscosity and high dielectric anisotropy and useful in liquid crystalline medium, especially for liquid crystal or electro-optical display

INVENTOR: BREMER, M; KIRSCH, P ; KRAUSE, J ; PAULUTH, D ; TARUMI, K

PRIORITY-DATA: 1996DE-1007996 (March 4, 1996)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 19607996 A1	September 11, 1997		020	C07C025/24

INT-CL (IPC): C07 C 25/18; C07 C 25/24; C07 D 239/24; C07 D 319/06; C09 K 19/30; C09 K 19/34; G09 F 9/35

ABSTRACTED-PUB-NO: DE 19607996A

BASIC-ABSTRACT:

Substituted 3-fluoro-cyclohex-3-en-1-yl derivatives of formula (I) are new; in which R1 = hydrogen (H), 1-15 carbon (C) alk(en)yl, optionally mono-substituted by cyano (CN) or trifluoromethyl (CF3) or at least mono-substituted by halogen, in which 1 or more methylene groups (CH2) may be replaced by oxygen (-O-), sulphur (-S-), 1,3-cyclobutylene, carbonyl (-CO-, carboxyl (-CO-O- or -O-CO-) or carbonate (-O-CO-O-) without directly linked O atoms; A1, A2 = (a) trans-1,4-cyclohexylene, in which 1 or more non-adjacent CH2 groups may be replaced by -O- and/or -S-; (b) 1,4-phenylene, in which 1 or 2 CH groups may be replaced by nitrogen (N); (c) 1,4-cyclohexenylene; or (d) 1,4-cyclohexenylene, 1,4-bicyclo(2,2,2)-octylene, piperidin-1,4-diyl, naphth-2,6-diyl, decahydronaphth-2,6-diyl or 1,2,3,4-tetrahydronaphth-2,6-diyl, in which groups (a-c) may be mono- or di-substituted by fluorine (F); Z1, Z2 = -CO-O-, -O-CO-, methyleneoxy (-CH2O- or -OCH2-), ethylene (-CH2CH2-), ethenylene (-CH=CH-), acetylene (-C triple bond C-), butylene (-CH2CH2CH2CH2-), butenylene (-CH=CH-CH2CH2-) or a single bond; m = 0, 1 or 2; L1 = F, chlorine (Cl), CN, isocyanato (NCO), isothiocyanato (NCS) or optionally substituted 1-6 C alk(en)yl, in which 1 or more CH2 groups may be replaced by -O-, -CO- or -CO-O- without directly linked O atoms. Also claimed is a liquid crystalline (LC) medium containing not less than 2 LC components, including compound(s) (I).

USE - (I) are used as components of LC media; and the medium is used in LC displays and as dielectric in electro-optical displays (all claimed). They are especially useful in displays of the twisted cell, guest-host, aligned phase deformation and dynamic scattering type. Liquid crystalline compounds (I) with suitable R groups are useful for preparing LC polymers or polycondensates; optically active (I) with branched R groups are useful as chiral dopants; smectic compounds of this type are useful in ferroelectric materials; and (I) with SA phases are useful for thermally addressed displays.

ADVANTAGE - (I) are stable LC or mesogenic compounds with relatively low viscosity and high dielectric anisotropy. They give stable LC media with a wide mesophase range, favourable birefringence and dielectric anisotropy and very good low temperature characteristics. Pure (I) are colourless and form LC mesophases in a favourable temperature range for electro-optical applications. They are stable chemically, thermally and in light.

Full Title CLS.1 REF.1 SEQ.1 ATT.1

Generate Collection

Print

Term	Documents
DE-19607996-\$	0
DE-19607996-A1	1
DE-19607996-\$.DID..USPT,JPAB,EPAB,DWPI,TDBD.	1
(DE-19607996-\$.DID.).USPT,JPAB,EPAB,DWPI,TDBD.	1

Display Format:

-

Change Format

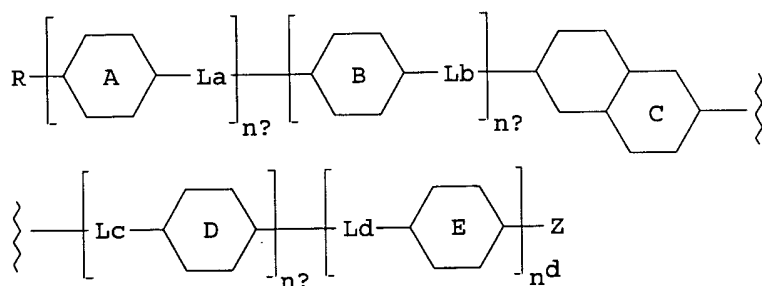
[Previous Page](#)

[Next Page](#)

AN 2001:12392 CAPLUS
 DN 134:78740
 TI Compound having **tetrahydronaphthalene** skeleton and liquid crystal composition containing the same
 IN Kusumoto, Tetsuo; Saitoh, Yoshitaka; Negishi, Makoto; Nagashima, Yutaka; Takehara, Sadao; Takatsu, Haruyoshi; Grahe, Gerwald; Frings, Rainer Bruno; Pithart, Cornelia
 PA Dainippon Ink and Chemicals, Inc., Japan
 SO PCT Int. Appl., 152 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 IC ICM C07C025-22
 ICS C07C025-24; C07C255-50; C07D213-30; C07D213-50; C07D213-79; G02F001-13; C09K019-32; C09K019-34
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 75
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001000548	A1	20010104	WO 1999-JP4919	19990910
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG JP 2001010991 A2 20010116 JP 1999-184786 19990630 JP 2001019648 A2 20010123 JP 1999-191670 19990706 AU 9956490 A1 20010131 AU 1999-56490 19990910 EP 1191008 A1 20020327 EP 1999-943251 19990910 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO PRAI JP 1999-184786 A 19990630 JP 1999-191670 A 19990706 WO 1999-JP4919 W 19990910 OS MARPAT 134:78740 GI				

OCF₃



I

AB A **tetrahydronaphthalene** deriv. represented I (R = C1-20 alkyl contg. Fs; La, Lb, Lc, and Ld = single bond, CH₂CH₂, CH=CH, etc.; Z = F, Cl, etc.; A, B, D, E = trans-1,4-cyclohexylene, etc.; C = arom. substituent; na-d = integers) and a liq. crystal compn. contg. the same are claimed. The compd. having general formula I has not only excellent

properties as a liq. crystal, but also excellent compatibility with a liq. crystal compd. or compn. being currently used, and further the addn. thereof to such a compd. or compn. allows the marked redn. of a threshold value for voltage with little detriment to response characteristics. The above compd. can be com. produced with ease, and is colorless and chem. stable. Accordingly, a liq. crystal compn. contg. the compd. is a practical liq. crystal which is extremely useful for a liq. crystal display which requires a wide working temp. range, an operation at a low voltage and a fast response.

ST **tetrahydronaphthalene** deriv liq crystal compn display

IT Liquid crystal displays

Liquid crystals

(compd. having **tetrahydronaphthalene** skeleton and liq. crystal compn. for display devices)

IT 348-61-8, 3,4-Difluorobromobenzene 405-51-6, 4-Fluorophenyl acetate
407-14-7, 4-Trifluoromethoxybromobenzene 4133-35-1 37436-26-3
40649-36-3, 4-Propylcyclohexanone 82832-73-3 315690-92-7 315690-94-9
RL: RCT (Reactant); RACT (Reactant or reagent)

(compd. having **tetrahydronaphthalene** skeleton and liq. crystal compn. for display devices)

IT 259742-60-4P 315229-04-0P 315690-88-1P 315690-89-2P 315690-95-0P
315690-96-1P 315690-98-3P 315690-99-4P 315691-02-2P 315691-03-3P
315691-04-4P 315691-06-6P 315691-08-8P 315691-09-9P 315691-12-4P
315691-13-5P 315691-14-6P 315691-15-7P 315691-18-0P 315691-19-1P
315691-23-7P 315691-24-8P 315691-25-9P 315691-26-0P 315691-27-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)

(compd. having **tetrahydronaphthalene** skeleton and liq. crystal compn. for display devices)

IT 315690-90-5P 315690-91-6P 315690-93-8P 315690-97-2P 315691-00-0P
315691-01-1P 315691-05-5P 315691-07-7P 315691-10-2P 315691-11-3P
315691-16-8P 315691-17-9P 315691-20-4P **315691-21-5P**
315691-22-6P 315691-28-2P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(compd. having **tetrahydronaphthalene** skeleton and liq. crystal compn. for display devices)

IT 158570-17-3 315691-30-6 315691-32-8

RL: TEM (Technical or engineered material use); USES (Uses)

(compd. having **tetrahydronaphthalene** skeleton and liq. crystal compn. for display devices)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Chisso Corporation; JP 60199878 A 1985 CAPLUS

(2) F Hoffmann-La Roche & Co; JP 5754130 A

(3) F Hoffmann-La Roche & Co; EP 47817 A2 1982 CAPLUS

(4) Takeda Chemical Industries Ltd; JP 06256284 A 1994 CAPLUS

(5) Takeda Chemical Industries Ltd; JP 06279321 A 1994 CAPLUS

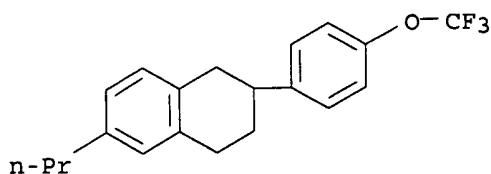
IT **315691-21-5P**

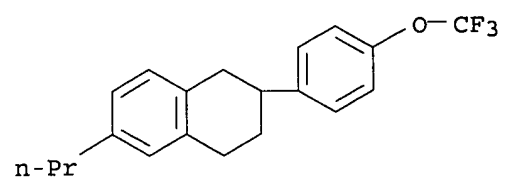
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(compd. having **tetrahydronaphthalene** skeleton and liq. crystal compn. for display devices)

RN 315691-21-5 CAPLUS

CN Naphthalene, 1,2,3,4-tetrahydro-6-propyl-2-[4-(trifluoromethoxy)phenyl]-
(9CI) (CA INDEX NAME)





=> dis 1-11

L5 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2003 ACS

AN 2003:409012 CAPLUS

DN 138:401503

TI Preparation of naphthalenes for use as liquid crystals or mesogenic compounds

IN Poetsch, Eike; Meyer, Volker

PA Merck Patent Gmbh, Germany

SO Ger. Offen., 50 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10251017	A1	20030528	DE 2002-10251017	20021102
PRAI	DE 2001-10158082	IA	20011127		

L5 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2003 ACS

AN 2002:768063 CAPLUS

DN 137:286604

TI Nematic liquid crystal compositions with stable nematic phase at low temperature and liquid crystal displays using them

IN Iwashita, Yoshinori; Negishi, Makoto; Takeuchi, Kiyofumi

PA Dainippon Ink and Chemicals, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002294236	A2	20021009	JP 2001-99773	20010330
PRAI	JP 2001-99773		20010330		
OS	MARPAT 137:286604				

L5 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2003 ACS

AN 2001:123188 CAPLUS

DN 134:186040

TI Phenanthrene and fluorene derivatives and their use in liquid crystal compositions and liquid crystal devices

IN Kawahara, Tatsuo; Takehara, Sadao; Ogawa, Shinji; Takatsu, Haruyoshi;

Grahe, Gerwald; Frings, Rainer Bruno; Fugger, Christine; Pithart, Cornelia

PA Dainippon Ink and Chemicals, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 72 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001048823	A2	20010220	JP 1999-219694	19990803
PRAI	JP 1999-219694		19990803		
OS	MARPAT 134:186040				

L5 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2003 ACS

AN 2001:106494 CAPLUS

DN 134:170897

TI Nematic liquid crystal compositions containing tetrahydronaphthalene derivatives and their liquid crystal displays

IN Takeuchi, Kiyofumi; Kanaoya, Masakazu; Takatsu, Haruyoshi

PA Dainippon Ink and Chemicals, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 72 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	JP 2001040355	A2	20010213	JP 1999-216515	19990730
PRAI	JP 1999-216515		19990730		
OS	MARPAT 134:170897				

L5 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2003 ACS

AN 2001:106362 CAPLUS

DN 134:170896

TI **Tetrahydronaphthalene** derivatives, liquid crystal compositions, and liquid crystal displays thereof

IN Kusumoto, Tetsuo; Takehara, Sadao; Takatsu, Haruyoshi

PA Dainippon Ink and Chemicals, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 56 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	JP 2001039906	A2	20010213	JP 1999-213381	19990728
PRAI	JP 1999-213381		19990728		
OS	MARPAT 134:170896				

L5 ANSWER 6 OF 12 CAPLUS COPYRIGHT 2003 ACS

AN 2001:57014 CAPLUS

DN 134:123663

TI Active matrix display using nematic liquid crystal

IN Ohnishi, Hiroyuki; Ogawa, Shinji; Kato, Naoe; Takatsu, Haruyoshi; Takeuchi, Kiyofumi

PA Dainippon Ink and Chemicals, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 20 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	JP 2001019964	A2	20010123	JP 1999-194308	19990708
PRAI	JP 1999-194308		19990708		
OS	MARPAT 134:123663				

L5 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2003 ACS

AN 2001:38560 CAPLUS

DN 134:108109

TI Liquid crystal display with specific nematic liquid crystal composition

IN Onishi, Hiroyuki; Ogawa, Sanharu; Takatsu, Haruyoshi; Takeuchi, Kiyofumi

PA Dainippon Ink and Chemicals, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	JP 2001011452	A2	20010116	JP 1999-183658	19990629
PRAI	JP 1999-183658		19990629		

L5 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2003 ACS

AN 2001:12392 CAPLUS
 DN 134:78740
 TI Compound having **tetrahydronaphthalene** skeleton and liquid
 crystal composition containing the same
 IN Kusumoto, Tetsuo; Saitoh, Yoshitaka; Negishi, Makoto; Nagashima, Yutaka;
 Takehara, Sadao; Takatsu, Haruyoshi; Grahe, Gerwald; Frings, Rainer Bruno;
 Pithart, Cornelia
 PA Dainippon Ink and Chemicals, Inc., Japan
 SO PCT Int. Appl., 152 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001000548	A1	20010104	WO 1999-JP4919	19990910
	W:				
	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU,				
	CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,				
	IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK,				
	MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,				
	TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ,				
	MD, RU, TJ, TM				
	RW:				
	GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,				
	ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,				
	CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	JP 2001010991	A2	20010116	JP 1999-184786	19990630
	JP 2001019648	A2	20010123	JP 1999-191670	19990706
	AU 9956490	A1	20010131	AU 1999-56490	19990910
	EP 1191008	A1	20020327	EP 1999-943251	19990910
	R:				
	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				
	IE, SI, LT, LV, FI, RO				
PRAI	JP 1999-184786	A	19990630		
	JP 1999-191670	A	19990706		
	WO 1999-JP4919	W	19990910		

OS MARPAT 134:78740
 RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2003 ACS
 AN 2000:873379 CAPLUS
 DN 134:49291
 TI Nematic liquid crystal compositions containing decalin derivatives and
 active-matrix LCD therewith
 IN Ohnishi, Hiroyuki; Ogawa, Shinji; Takatsu, Haruyoshi; Takeuchi, Kiyofumi
 PA Dainippon Ink and Chemicals, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 10 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000345162	A2	20001212	JP 1999-160217	19990607
PRAI	JP 1999-160217		19990607		
OS	MARPAT 134:49291				

L5 ANSWER 10 OF 12 CAPLUS COPYRIGHT 2003 ACS
 AN 2000:866487 CAPLUS
 DN 134:35136
 TI Nematic liquid crystal compositions containing fluorinated decalin
 derivative and active-matrix LCD therewith
 IN Onishi, Hiroyuki; Ogawa, Shinji; Kato, Naoe; Takatsu, Haruyoshi; Takeuchi,
 Kiyofumi
 PA Dainippon Ink and Chemicals, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000345163	A2	20001212	JP 1999-160222	19990607
PRAI	JP 1999-160222		19990607		
OS	MARPAT 134:35136				

L5 ANSWER 11 OF 12 CAPLUS COPYRIGHT 2003 ACS

AN 2000:210286 CAPLUS

DN 132:258221

TI Nematic liquid crystal composition and liquid crystal display using the same

IN Takeuchi, Kiyofumi; Takatsu, Haruyoshi; Yanagihara, Hirokazu

PA Dainippon Ink and Chemicals, Inc., Japan

SO PCT Int. Appl., 355 pp.

CODEN: PIXXD2

DT Patent

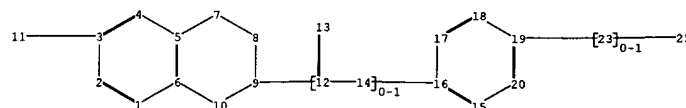
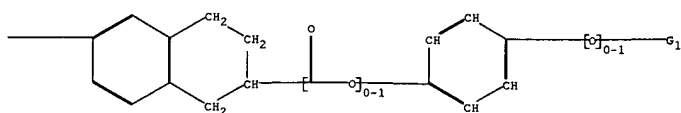
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000017287	A1	20000330	WO 1999-JP4918	19990910
	W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	JP 2000096061	A2	20000404	JP 1998-266993	19980921
	JP 2000336363	A2	20001205	JP 1999-150024	19990528
	JP 2001072974	A2	20010321	JP 1999-222046	19990805
	CA 2344667	AA	20000330	CA 1999-2344667	19990910
	AU 9956489	A1	20000410	AU 1999-56489	19990910
	EP 1116770	A1	20010718	EP 1999-943250	19990910
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			
PRAI	JP 1998-266993	A	19980921		
	JP 1999-150024	A	19990528		
	JP 1999-187087	A	19990630		
	WO 1999-JP4918	W	19990910		

OS MARPAT 132:258221

RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT



chain nodes :

11 12 13 14 23 25

ring nodes :

1 2 3 4 5 6 7 8 9 10 15 16 17 18 19 20

chain bonds :

3-11 9-12 12-13 12-14 14-16 19-23 23-25

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-10 7-8 8-9 9-10 15-16 15-20 16-17 17-18
18-19 19-20

exact/norm bonds :

5-7 6-10 7-8 8-9 9-10 12-13 12-14 14-16 19-23 23-25

exact bonds :

3-11 9-12

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 15-16 15-20 16-17 17-18 18-19 19-20

G1:F,CN,C1,CF2,CF3

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:CLASS
12:CLASS 13:CLASS 14:CLASS 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom 20:Atom
23:CLASS 25:CLASS

L5 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2003 ACS

AN 2001:106362 CAPLUS

DN 134:170896

TI Tetrahydronaphthalene derivatives, liquid crystal compositions, and liquid crystal displays thereof

IN Kusumoto, Tetsuo; Takehara, Sadao; Takatsu, Haruyoshi

PA Dainippon Ink and Chemicals, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 56 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001039906	A2	20010213	JP 1999-213381	19990728
PRAI	JP 1999-213381		19990728		
OS	MARPAT 134:170896				

L5 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2003 ACS

AN 2001:12392 CAPLUS

DN 134:78740

TI Compound having tetrahydronaphthalene skeleton and liquid crystal composition containing the same

IN Kusumoto, Tetsuo; Saitoh, Yoshitaka; Negishi, Makoto; Nagashima, Yutaka; Takehara, Sadao; Takatsu, Haruyoshi; Grahe, Gerwald; Frings, Rainer Bruno; Pithart, Cornelia

PA Dainippon Ink and Chemicals, Inc., Japan

SO PCT Int. Appl., 152 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001000548	A1	20010104	WO 1999-JP4919	19990910
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	JP 2001010991	A2	20010116	JP 1999-184786	19990630
	JP 2001019648	A2	20010123	JP 1999-191670	19990706
	AU 9956490	A1	20010131	AU 1999-56490	19990910
	EP 1191008	A1	20020327	EP 1999-943251	19990910
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRAI	JP 1999-184786	A	19990630		
	JP 1999-191670	A	19990706		
	WO 1999-JP4919	W	19990910		
OS	MARPAT 134:78740				

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2003 ACS

AN 1982:199323 CAPLUS

DN 96:199323

TI Halogenated carbocyclic ester derivatives for use in liquid crystal compositions

IN Sugimori, Shigeru

PA Chisso Corp., Japan

SO Brit. UK Pat. Appl., 13 pp.

CODEN: BAXXDU

DT Patent

LA English

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 2070593	A	19810909	GB 1981-2277	19810126
	GB 2070593	B2	19840321		
	JP 56104844	A2	19810820	JP 1980-7539	19800125
	JP 60059893	B4	19851227		
	JP 56110777	A2	19810902	JP 1980-13889	19800207
	JP 63012053	B4	19880317		
	JP 56135445	A2	19811022	JP 1980-39202	19800327
	JP 61026979	B4	19860623		
PRAI	JP 1980-7539		19800125		
	JP 1980-13889		19800207		
	JP 1980-39202		19800327		

L5 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2003 ACS

AN 1982:34895 CAPLUS

DN 96:34895

TI p-Fluorophenyl esters for liquid crystal compositions

PA Chisso Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 56104844	A2	19810820	JP 1980-7539	19800125
	JP 60059893	B4	19851227		
	DE 3102017	A1	19811224	DE 1981-3102017	19810122
	DE 3102017	C2	19830414		
	CH 645876	A	19841031	CH 1981-406	19810122
	US 4340498	A	19820720	US 1981-227942	19810123
	GB 2070593	A	19810909	GB 1981-2277	19810126
	GB 2070593	B2	19840321		
PRAI	JP 1980-7539		19800125		
	JP 1980-13889		19800207		
	JP 1980-39202		19800327		

L5 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2003 ACS

AN 1981:515135 CAPLUS

DN 95:115135

TI p-Cyanophenyl 6-substituted-1,2,3,4-tetrahydronaphthalene-2-carboxylates

PA Chisso Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

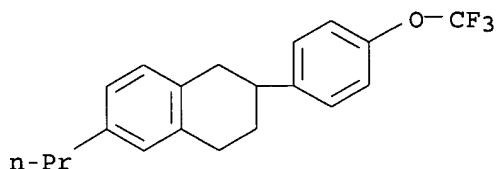
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 56046855	A2	19810428	JP 1979-124467	19790927
	JP 61023784	B4	19860607		
PRAI	JP 1979-124467		19790927		

=> dis 1-5

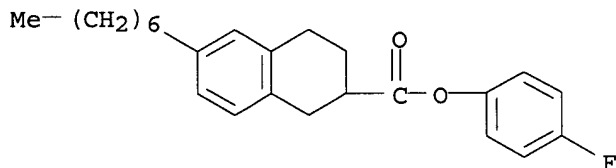
L3 ANSWER 1 OF 5 REGISTRY COPYRIGHT 2003 ACS
RN 315691-21-5 REGISTRY
CN Naphthalene, 1,2,3,4-tetrahydro-6-propyl-2-[4-(trifluoromethoxy)phenyl]-
(9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C20 H21 F3 O
SR CA
LC STN Files: CA, CAPLUS



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1957 TO DATE)
2 REFERENCES IN FILE CAPLUS (1957 TO DATE)

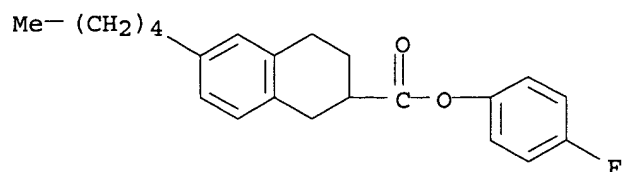
L3 ANSWER 2 OF 5 REGISTRY COPYRIGHT 2003 ACS
RN 79913-04-5 REGISTRY
CN 2-Naphthalenecarboxylic acid, 6-heptyl-1,2,3,4-tetrahydro-, 4-fluorophenyl
ester (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C24 H29 F O2
LC STN Files: CA, CAPLUS



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1957 TO DATE)
2 REFERENCES IN FILE CAPLUS (1957 TO DATE)

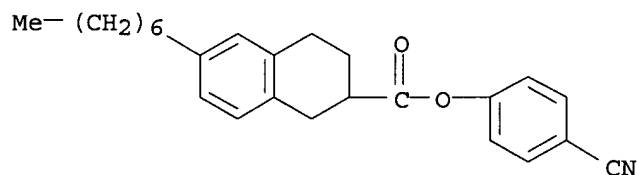
L3 ANSWER 3 OF 5 REGISTRY COPYRIGHT 2003 ACS
RN 79913-03-4 REGISTRY
CN 2-Naphthalenecarboxylic acid, 1,2,3,4-tetrahydro-6-pentyl-, 4-fluorophenyl
ester (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C22 H25 F O2
LC STN Files: CA, CAPLUS



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1957 TO DATE)
2 REFERENCES IN FILE CAPLUS (1957 TO DATE)

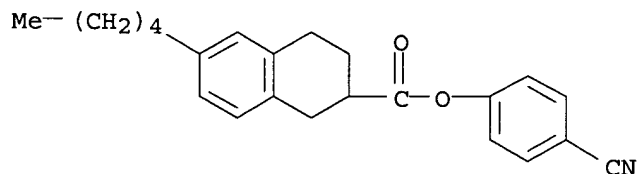
L3 ANSWER 4 OF 5 REGISTRY COPYRIGHT 2003 ACS
RN 78986-20-6 REGISTRY
CN 2-Naphthalenecarboxylic acid, 6-heptyl-1,2,3,4-tetrahydro-, 4-cyanophenyl ester (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C25 H29 N O2
LC STN Files: CA, CAPLUS



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1957 TO DATE)
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

L3 ANSWER 5 OF 5 REGISTRY COPYRIGHT 2003 ACS
RN 78986-19-3 REGISTRY
CN 2-Naphthalenecarboxylic acid, 1,2,3,4-tetrahydro-6-pentyl-, 4-cyanophenyl ester (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C23 H25 N O2
LC STN Files: CA, CAPLUS



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1957 TO DATE)
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

=> file caplus
COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION

FULL ESTIMATED COST

157.75

157.96

FILE 'CAPLUS' ENTERED AT 13:56:32 ON 30 JUN 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 30 Jun 2003 VOL 139 ISS 1
FILE LAST UPDATED: 29 Jun 2003 (20030629/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l2

L4 0 L2

=> d his

(FILE 'HOME' ENTERED AT 13:54:01 ON 30 JUN 2003)

FILE 'REGISTRY' ENTERED AT 13:54:04 ON 30 JUN 2003

L1 STRUCTURE UPLOADED

L2 0 S L1

L3 5 S L1 FUL

FILE 'CAPLUS' ENTERED AT 13:56:32 ON 30 JUN 2003

L4 0 S L2

=> s l3

L5 5 L3

=> dis 1-5

L5 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2003 ACS

AN 2001:106362 CAPLUS

DN 134:170896

TI Tetrahydronaphthalene derivatives, liquid crystal compositions, and liquid crystal displays thereof

IN Kusumoto, Tetsuo; Takehara, Sadao; Takatsu, Haruyoshi

PA Dainippon Ink and Chemicals, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 56 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001039906	A2	20010213	JP 1999-213381	19990728
PRAI	JP 1999-213381		19990728		
OS	MARPAT 134:170896				

L5 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2003 ACS

AN 2001:12392 CAPLUS
 DN 134:78740
 TI Compound having tetrahydronaphthalene skeleton and liquid crystal composition containing the same
 IN Kusumoto, Tetsuo; Saitoh, Yoshitaka; Negishi, Makoto; Nagashima, Yutaka; Takehara, Sadao; Takatsu, Haruyoshi; Grahe, Gerwald; Frings, Rainer Bruno; Pithart, Cornelia
 PA Dainippon Ink and Chemicals, Inc., Japan
 SO PCT Int. Appl., 152 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001000548	A1	20010104	WO 1999-JP4919	19990910
	W:				
	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW:				
	GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	JP 2001010991	A2	20010116	JP 1999-184786	19990630
	JP 2001019648	A2	20010123	JP 1999-191670	19990706
	AU 9956490	A1	20010131	AU 1999-56490	19990910
	EP 1191008	A1	20020327	EP 1999-943251	19990910
	R:				
	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRAI	JP 1999-184786	A	19990630		
	JP 1999-191670	A	19990706		
	WO 1999-JP4919	W	19990910		

OS MARPAT 134:78740
 RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2003 ACS
 AN 1982:199323 CAPLUS
 DN 96:199323
 TI Halogenated carbocyclic ester derivatives for use in liquid crystal compositions
 IN Sugimori, Shigeru
 PA Chisso Corp., Japan
 SO Brit. UK Pat. Appl., 13 pp.
 CODEN: BAXXDU
 DT Patent
 LA English
 FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 2070593	A	19810909	GB 1981-2277	19810126
	GB 2070593	B2	19840321		
	JP 56104844	A2	19810820	JP 1980-7539	19800125
	JP 60059893	B4	19851227		
	JP 56110777	A2	19810902	JP 1980-13889	19800207
	JP 63012053	B4	19880317		
	JP 56135445	A2	19811022	JP 1980-39202	19800327
	JP 61026979	B4	19860623		
PRAI	JP 1980-7539		19800125		
	JP 1980-13889		19800207		
	JP 1980-39202		19800327		

L5 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2003 ACS
AN 1982:34895 CAPLUS
DN 96:34895
TI p-Fluorophenyl esters for liquid crystal compositions
PA Chisso Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese

FAN.CNT 3

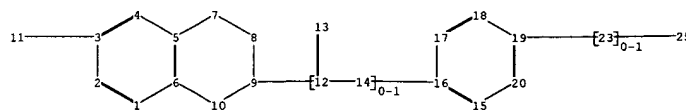
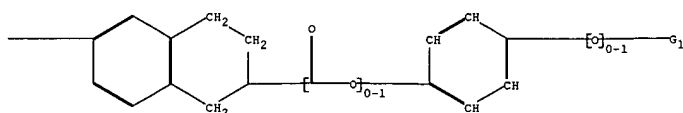
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 56104844	A2	19810820	JP 1980-7539	19800125
	JP 60059893	B4	19851227		
	DE 3102017	A1	19811224	DE 1981-3102017	19810122
	DE 3102017	C2	19830414		
	CH 645876	A	19841031	CH 1981-406	19810122
	US 4340498	A	19820720	US 1981-227942	19810123
	GB 2070593	A	19810909	GB 1981-2277	19810126
	GB 2070593	B2	19840321		
PRAI	JP 1980-7539		19800125		
	JP 1980-13889		19800207		
	JP 1980-39202		19800327		

L5 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2003 ACS
AN 1981:515135 CAPLUS
DN 95:115135
TI p-Cyanophenyl 6-substituted-1,2,3,4-tetrahydronaphthalene-2-carboxylates
PA Chisso Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF

DT Patent
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 56046855	A2	19810428	JP 1979-124467	19790927
	JP 61023784	B4	19860607		
PRAI	JP 1979-124467		19790927		



chain nodes :

11 12 13 14 23 25

ring nodes :

1 2 3 4 5 6 7 8 9 10 15 16 17 18 19 20

chain bonds :

3-11 9-12 12-13 12-14 14-16 19-23 23-25

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-10 7-8 8-9 9-10 15-16 15-20 16-17 17-18
18-19 19-20

exact/norm bonds :

5-7 6-10 7-8 8-9 9-10 12-13 12-14 14-16 19-23 23-25

exact bonds :

3-11 9-12

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 15-16 15-20 16-17 17-18 18-19 19-20

G1:F,CN,Cl,CF2,CF3

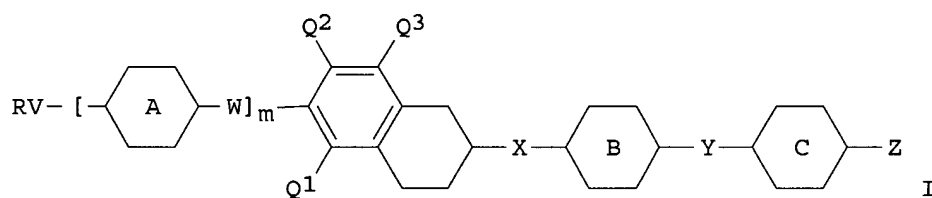
Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:CLASS
 12:CLASS 13:CLASS 14:CLASS 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom 20:Atom
 23:CLASS 25:CLASS

L10 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2003 ACS
 AN 2001:106362 CAPLUS
 DN 134:170896
 TI Tetrahydronaphthalene derivatives, liquid crystal compositions, and liquid crystal displays thereof
 IN Kusumoto, Tetsuo; Takehara, Sadao; Takatsu, Haruyoshi
 PA Dainippon Ink and Chemicals, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 56 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C07C025-22
 ICS C07C043-225; C09K019-32; C09K019-34; G02F001-13
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 24, 25
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001039906	A2	20010213	JP 1999-213381	19990728
JP 1999-213381		19990728		
MARPAT 134:170896				

 GI



AB The liq. crystal compns. contain the tetrahydronaphthalene derivs. I (R = C1-20 alkyl; linkage V = single bond, O, S, CO2, OCO, OCO2, COS, SCO; linkage W, X, Y = single bond, CH2CH2, CH:CH, etc.; Z = F, Cl, CN, etc.; Q1, Q2, Q3 = H, F; ring A, B = trans-1,4-cyclohexylene, trans-decahydronaphthalene-2,6-diyl, etc.; ring C = 1,4-phenylene or naphthalene-2,6-diyl which may be substituted with 1 or 2 F; m, n = 0, 1). I have wide liq. cryst. temp. range and can be mixed with other liq. cryst. compds. without phase sepn.
 ST tetrahydronaphthalene deriv liq crystal display
 IT Liquid crystal displays
 Liquid crystals
 (tetrahydronaphthalene derivs., liq. crystal compns., and liq. crystal displays thereof)
 IT 315691-20-4P 315691-21-5P 315691-22-6P 315691-28-2P
 315691-31-7P
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (tetrahydronaphthalene derivs., liq. crystal compns., and liq. crystal displays thereof)
 IT 315691-18-0P 315691-19-1P 315691-24-8P 315691-25-9P 325789-85-3P
 325789-86-4P
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (tetrahydronaphthalene derivs., liq. crystal compns., and liq. crystal displays thereof)
 IT 348-61-8, 3,4-Difluorobromobenzene 407-14-7, 4-Trifluoromethoxybromobenzene 588-93-2 4133-35-1 37436-26-3
 40649-36-3, 4-Propylcyclohexanone 134150-01-9 138526-69-9, 3,4,5-Trifluorobromobenzene

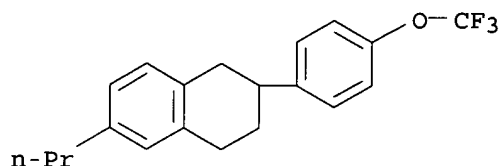
RL: RCT (Reactant); RACT (Reactant or reagent)
(tetrahydronaphthalene derivs., liq. crystal compns., and liq. crystal
displays thereof)

IT 315691-21-5P

RL: DEV (Device component use); PNU (Preparation, unclassified); PREP
(Preparation); USES (Uses)
(tetrahydronaphthalene derivs., liq. crystal compns., and liq. crystal
displays thereof)

RN 315691-21-5 CAPLUS

CN Naphthalene, 1,2,3,4-tetrahydro-6-propyl-2-[4-(trifluoromethoxy)phenyl]-
(9CI) (CA INDEX NAME)



L10 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2003 ACS

AN 2001:12392 CAPLUS

DN 134:78740

TI Compound having tetrahydronaphthalene skeleton and liquid crystal
composition containing the same

IN Kusumoto, Tetsuo; Saitoh, Yoshitaka; Negishi, Makoto; Nagashima, Yutaka;
Takehara, Sadao; Takatsu, Haruyoshi; Grahe, Gerwald; Frings, Rainer Bruno;
Pithart, Cornelia

PA Dainippon Ink and Chemicals, Inc., Japan

SO PCT Int. Appl., 152 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

IC ICM C07C025-22

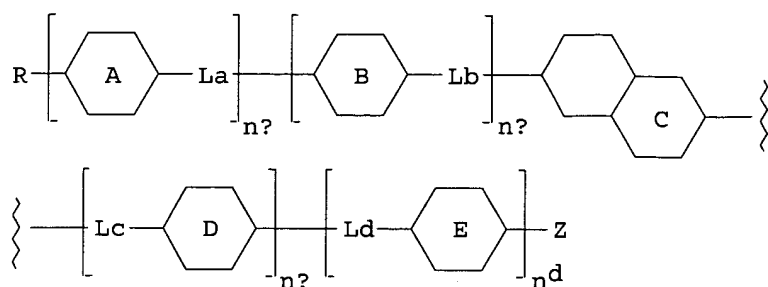
ICS C07C025-24; C07C255-50; C07D213-30; C07D213-50; C07D213-79;
G02F001-13; C09K019-32; C09K019-34

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

Section cross-reference(s): 75

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001000548	A1	20010104	WO 1999-JP4919	19990910
	W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	JP 2001010991	A2	20010116	JP 1999-184786	19990630
	JP 2001019648	A2	20010123	JP 1999-191670	19990706
	AU 9956490	A1	20010131	AU 1999-56490	19990910
	EP 1191008	A1	20020327	EP 1999-943251	19990910
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			
PRAI	JP 1999-184786	A	19990630		
	JP 1999-191670	A	19990706		
	WO 1999-JP4919	W	19990910		
OS	MARPAT 134:78740				



I

AB A tetrahydronaphthalene deriv. represented I (R = C1-20 alkyl contg. Fs; La, Lb, Lc, and Ld = single bond, CH₂CH₂, CH=CH, etc.; Z = F, Cl, etc.; A, B, D, E = trans-1,4-cyclohexylene, etc.; C = arom. substituent; na-d = integers) and a liq. crystal compn. contg. the same are claimed. The compd. having general formula I has not only excellent properties as a liq. crystal, but also excellent compatibility with a liq. crystal compd. or compn. being currently used, and further the addn. thereof to such a compd. or compn. allows the marked redn. of a threshold value for voltage with little detriment to response characteristics. The above compd. can be com. produced with ease, and is colorless and chem. stable. Accordingly, a liq. crystal compn. contg. the compd. is a practical liq. crystal which is extremely useful for a liq. crystal display which requires a wide working temp. range, an operation at a low voltage and a fast response.

ST tetrahydronaphthalene deriv liq crystal compn display

IT Liquid crystal displays

Liquid crystals

(compd. having tetrahydronaphthalene skeleton and liq. crystal compn. for display devices)

IT 348-61-8, 3,4-Difluorobromobenzene 405-51-6, 4-Fluorophenyl acetate
407-14-7, 4-Trifluoromethoxybromobenzene 4133-35-1 37436-26-3
40649-36-3, 4-Propylcyclohexanone 82832-73-3 315690-92-7 315690-94-9
RL: RCT (Reactant); RACT (Reactant or reagent)

(compd. having tetrahydronaphthalene skeleton and liq. crystal compn. for display devices)

IT 259742-60-4P 315229-04-0P 315690-88-1P 315690-89-2P 315690-95-0P
315690-96-1P 315690-98-3P 315690-99-4P 315691-02-2P 315691-03-3P
315691-04-4P 315691-06-6P 315691-08-8P 315691-09-9P 315691-12-4P
315691-13-5P 315691-14-6P 315691-15-7P 315691-18-0P 315691-19-1P
315691-23-7P 315691-24-8P 315691-25-9P 315691-26-0P 315691-27-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(compd. having tetrahydronaphthalene skeleton and liq. crystal compn. for display devices)

IT 315690-90-5P 315690-91-6P 315690-93-8P 315690-97-2P 315691-00-0P
315691-01-1P 315691-05-5P 315691-07-7P 315691-10-2P 315691-11-3P
315691-16-8P 315691-17-9P 315691-20-4P 315691-21-5P
315691-22-6P 315691-28-2P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(compd. having tetrahydronaphthalene skeleton and liq. crystal compn. for display devices)

IT 158570-17-3 315691-30-6 315691-32-8

RL: TEM (Technical or engineered material use); USES (Uses)

(compd. having tetrahydronaphthalene skeleton and liq. crystal compn. for display devices)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

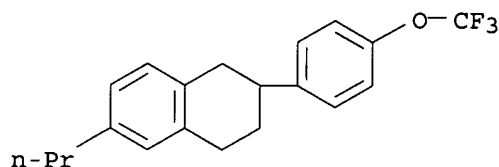
- (1) Chisso Corporation; JP 60199878 A 1985 CAPLUS
- (2) F Hoffmann-La Roche & Co; JP 5754130 A
- (3) F Hoffmann-La Roche & Co; EP 47817 A2 1982 CAPLUS
- (4) Takeda Chemical Industries Ltd; JP 06256284 A 1994 CAPLUS
- (5) Takeda Chemical Industries Ltd; JP 06279321 A 1994 CAPLUS

IT 315691-21-5P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(compd. having tetrahydronaphthalene skeleton and liq. crystal compn. for display devices)

RN 315691-21-5 CAPLUS

CN Naphthalene, 1,2,3,4-tetrahydro-6-propyl-2-[4-(trifluoromethoxy)phenyl]-
(9CI) (CA INDEX NAME)



L10 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2003 ACS

AN 1982:199323 CAPLUS

DN 96:199323

TI Halogenated carbocyclic ester derivatives for use in liquid crystal compositions

IN Sugimori, Shigeru

PA Chisso Corp., Japan

SO Brit. UK Pat. Appl., 13 pp.

CODEN: BAXXDU

DT Patent

LA English

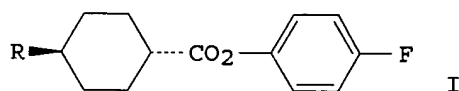
IC C07C069-75; C07C069-76; C07C069-753

CC 25-18 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 75

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 2070593	A	19810909	GB 1981-2277	19810126
	GB 2070593	B2	19840321		
	JP 56104844	A2	19810820	JP 1980-7539	19800125
	JP 60059893	B4	19851227		
	JP 56110777	A2	19810902	JP 1980-13889	19800207
	JP 63012053	B4	19880317		
	JP 56135445	A2	19811022	JP 1980-39202	19800327
	JP 61026979	B4	19860623		
	PRAI	JP 1980-7539		19800125	
	JP 1980-13889		19800207		
	JP 1980-39202		19800327		

GI



I

AB The halophenyl esters p-RC6H4R1 (R = F, Cl, R1 = CO2R2, O2CR2; R2 =

alkyl-, alkoxy-substituted cyclohexyl, Ph, cyclohexylcyclohexyl, naphthyl) were prepd. by esterification of an acid with an alc. or a phenol through chlorination, and are useful in liq. crystal compns. E.g., the esters I [R = (CH₂)₄Me (II), (CH₂)₅Me (III), (CH₂)₆Me (IV)], resp., were prepd. by chlorination of the corresponding acids and esterification with 4-FC₆H₄OH. A liq. crystal compn. comprising II-III-IV in a ratio of 1:1:3 had an N-I pt. of 29.4.degree. and .DELTA..epsilon. = + 1.4. Its threshold and satn. voltages were 1.8 and 2.6 V, resp., at 25.degree..

ST liq crystal halophenyl cyclohexyl ester; naphthyl halophenyl ester liq crystal

IT Liquid crystals

(halophenyl esters, prepn. of)

IT Esters, preparation

RL: SPN (Synthetic preparation); PREP (Preparation)

(halophenyl, prepn. of, for use in liq. crystal compns.)

IT 68162-19-6P 68162-22-1P 79912-83-7P 79912-84-8P 79912-85-9P

79912-98-4P 80079-03-4P 80079-12-5P 81701-13-5P 81701-14-6P

RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. and use of, in liq. crystal compn.)

IT 729-39-5P 32792-48-6P 64191-91-9P 68162-17-4P 68162-23-2P

71691-13-9P 79912-81-5P 79912-82-6P 79912-86-0P 79912-87-1P

79912-88-2P 79912-89-3P 79912-90-6P 79912-91-7P 79912-92-8P

79912-93-9P 79912-94-0P 79912-95-1P 79912-96-2P 79912-99-5P

79913-00-1P 79913-01-2P 79913-02-3P **79913-03-4P**

79913-04-5P 80079-00-1P 80079-01-2P 80079-02-3P

80079-04-5P 80079-05-6P 80079-06-7P 80079-07-8P 80079-08-9P

80079-09-0P 80079-10-3P 80079-11-4P 81701-15-7P 81701-16-8P

RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. of)

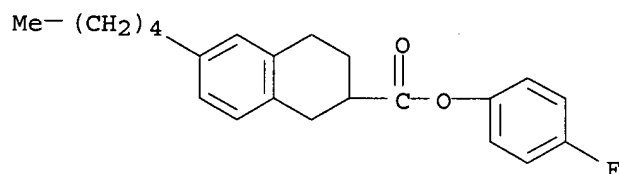
IT **79913-03-4P 79913-04-5P**

RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. of)

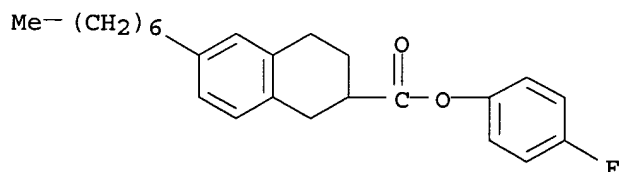
RN 79913-03-4 CAPLUS

CN 2-Naphthalenecarboxylic acid, 1,2,3,4-tetrahydro-6-pentyl-, 4-fluorophenyl ester (9CI) (CA INDEX NAME)



RN 79913-04-5 CAPLUS

CN 2-Naphthalenecarboxylic acid, 6-heptyl-1,2,3,4-tetrahydro-, 4-fluorophenyl ester (9CI) (CA INDEX NAME)



L10 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2003 ACS

AN 1982:34895 CAPLUS

DN 96:34895

TI p-Fluorophenyl esters for liquid crystal compositions

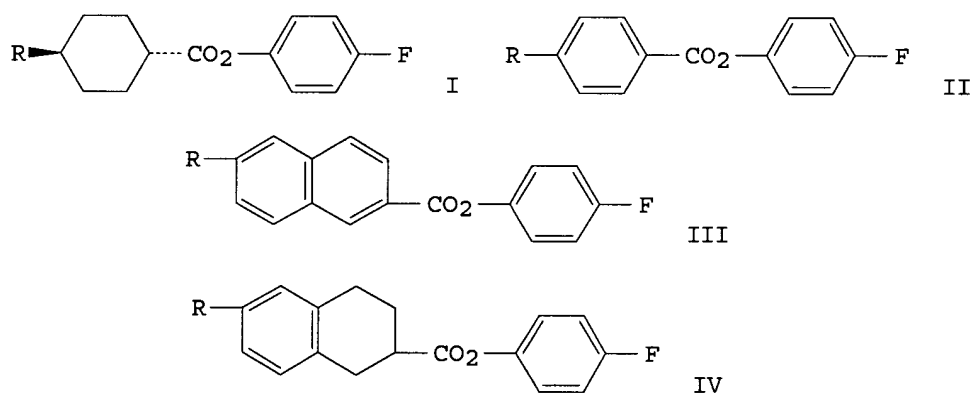
PA Chisso Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC C07C069-013; C09K003-34
 ICA G02F001-13; G09F009-00; G09F009-35
 CC 25-18 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
 Section cross-reference(s): 75

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 56104844	A2	19810820	JP 1980-7539	19800125
	JP 60059893	B4	19851227		
	DE 3102017	A1	19811224	DE 1981-3102017	19810122
	DE 3102017	C2	19830414		
	CH 645876	A	19841031	CH 1981-406	19810122
	US 4340498	A	19820720	US 1981-227942	19810123
	GB 2070593	A	19810909	GB 1981-2277	19810126
	GB 2070593	B2	19840321		
PRAI	JP 1980-7539		19800125		
	JP 1980-13889		19800207		
	JP 1980-39202		19800327		

GI



AB Twenty-eight p-fluorophenyl esters I (R = C3-8 alkyl, n-C6H13O), II (R = C3-5 or C7-8 alkyl, C1-8 alkoxy, p-pentylphenyl, trans-4-pentylcyclohexyl), III (R = n-C5H11, n-C7H15, n-C5H11O, n-C8H17O), and IV (R = n-C5H11, n-C7H15), suitable for liq.-crystal compns. with a threshold voltage of 1.4-2.0 V, were prepd. by esterification. Thus, 30 mmol trans-4-propylcyclohexanecarboxylic acid was heated with SOCl2 and the acid chloride treated with 3.3 g p-FC6H4OH in pyridine to give 77.0% I (R = Pr).

ST liq crystal fluorophenyl cyclohexanecarboxylate; naphthoate fluorophenyl liq crystal; benzoate fluorophenyl liq crystal; tetralincarboxylate fluorophenyl liq crystal

IT Liquid crystals
 (fluorophenyl alkylcyclohexanecarboxylates and related compds.)

IT 371-41-5

RL: RCT (Reactant); RACT (Reactant or reagent)

(esterification of, in prepn. of liq.-crystal compns)

IT 729-39-5P 68162-19-6P 68162-22-1P 71691-13-9P 79912-81-5P
 79912-82-6P 79912-83-7P 79912-84-8P 79912-85-9P 79912-86-0P
 79912-87-1P 79912-88-2P 79912-89-3P 79912-90-6P 79912-91-7P
 79912-92-8P 79912-93-9P 79912-94-0P 79912-95-1P 79912-96-2P
 79912-97-3P 79912-98-4P 79912-99-5P 79913-00-1P 79913-01-2P
 79913-02-3P 79913-03-4P 79913-04-5P

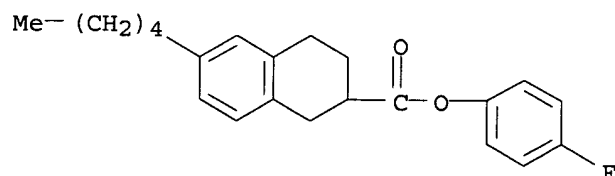
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, for liq.-crystal compns.)

IT 79913-03-4P 79913-04-5P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, for liq.-crystal compns.)

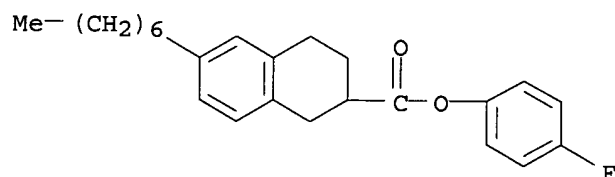
RN 79913-03-4 CAPLUS

CN 2-Naphthalenecarboxylic acid, 1,2,3,4-tetrahydro-6-pentyl-, 4-fluorophenyl
ester (9CI) (CA INDEX NAME)



RN 79913-04-5 CAPLUS

CN 2-Naphthalenecarboxylic acid, 6-heptyl-1,2,3,4-tetrahydro-, 4-fluorophenyl
ester (9CI) (CA INDEX NAME)



L10 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2003 ACS

AN 1981:515135 CAPLUS

DN 95:115135

TI p-Cyanophenyl 6-substituted-1,2,3,4-tetrahydronaphthalene-2-carboxylates

PA Chisso Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC C07C121-75; C09K003-34

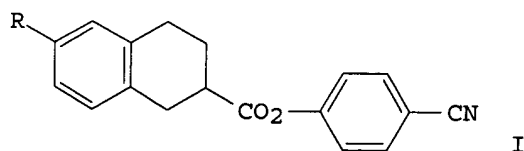
CC 26-3 (Condensed Aromatic Compounds)

Section cross-reference(s): 75

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 56046855	A2	19810428	JP 1979-124467	19790927
	JP 61023784	B4	19860607		
PRAI	JP 1979-124467		19790927		

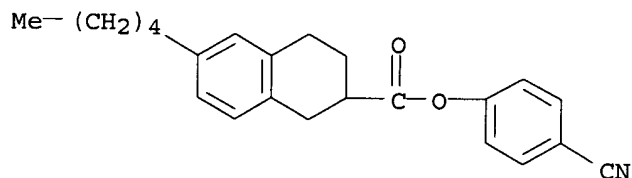
GI



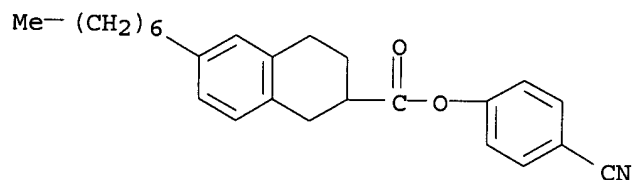
AB Title ester I (R = pentyl, heptyl, pentyloxy, octyloxy) were prepd. and
used as liq. crystals having post dielec. anisotropy. Thus, redn. of
6-pentyl-2-naphthalenecarboxylic acid with Na in isoamyl alc. yielded

6-pentyl-1,2,3,4-tetrahydro-2-naphthalenecarboxylic acid, which (1.23 g) was heated with SOCl₂ 2 h at 60.degree., concd., 0.6 g 4-NCC6H₄OH in pyridine added, and the mixt. kept overnight to give 1.1 g I (R = pentyl).

ST liq crystal cyanophenyl alkyltetralincarboxylate
 IT Liquid crystals
 (cyanophenol alkyltetralinecarboxylate)
 IT 767-00-0
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (esterification of, with pentyltetralenecarboxylic acid)
 IT 78986-18-2P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (prepn. and esterification of, with cyanophenol)
 IT **78986-19-3P 78986-20-6P 78986-21-7P 78986-22-8P**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and liq. crystal compn. of)
 IT 66259-27-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (redn. of)
 IT **78986-19-3P 78986-20-6P**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and liq. crystal compn. of)
 RN 78986-19-3 CAPLUS
 CN 2-Naphthalenecarboxylic acid, 1,2,3,4-tetrahydro-6-pentyl-, 4-cyanophenyl ester (9CI) (CA INDEX NAME)



RN 78986-20-6 CAPLUS
 CN 2-Naphthalenecarboxylic acid, 6-heptyl-1,2,3,4-tetrahydro-, 4-cyanophenyl ester (9CI) (CA INDEX NAME)



WEST

Generate Collection

Print

L1: Entry 1 of 2

File: JPAB

Oct 4, 1994

PUB-NO: JP406279321A

DOCUMENT-IDENTIFIER: JP 06279321 A

TITLE: 2-ALKYL-6-SUBSTITUTED-1,2,3,4-TETRAHYDRONAPHTHALENE DERIVATIVE, PRODUCTION THEREOF AND LIQUID CRYSTAL COMPOSITION CONTAINING THE DERIVATIVE

PUBN-DATE: October 4, 1994

INVENTOR-INFORMATION:

NAME

COUNTRY

KAWADA, MITSURU

UESUGI, YOSHITAKA

YAMASHITA, TOSHIRO

UCHIUMI, YUUKA

TERAO, HIROSHI

KONDO, KATSUMI

OHARA, SHUICHI

US-CL-CURRENT: 560/73

INT-CL (IPC): C07C 13/48; C07C 23/18; C07C 25/18; C07C 41/09; C07C 43/20; C07C 67/08; C07C 69/75; C07C 69/92; C07C 69/94 ; C07C 253/30; C07C 255/50; C07C 255/54; C07C 255/55; C07C 327/26; C07D 239/36; C09K 19/32; C09K 19/34

ABSTRACT:

PURPOSE: To provide a new liquid crystal compound having physical and chemical stability, exhibiting stable nematic phase and having small refractive index anisotropy and low viscosity.

CONSTITUTION: The compound of formula I [R1 is (substituted) 1-14C alkyl, alkoxy, acyloxy, halogen or CN; R2 is (substituted) 1-14C alkyl; rings A and B are (substituted) group of formula II to formula V; X and Y are single bond, (thio)ester bond, methyleneoxy bond or oxymethylene bond; (m) and (n) are 0 or 2 provided that both (m) and (n) are not 0 at the same time; when (n) is 0, at least one of X and Y is single bond]. The compound can be produced by the condensation reaction of (A) an alcoholic component compound or its active derivative as a skeleton component of formula VI or a carboxylic acid compound or its active derivative as a skeleton component of formula VII with (B) a phenolic compound of formula VIII.

COPYRIGHT: (C)1994, JPO

WEST

Generate Collection

Print

L2: Entry 1 of 2

File: JPAB

Sep 13, 1994

PUB-NO: JP406256284A

DOCUMENT-IDENTIFIER: JP 06256284 A

TITLE: 2-CYANO-6-SUBSTITUTED-3,4-DHYDRO (OR 1,2,3,4-TETRAHYDRO) NAPHTHALENE
DERIVATIVE, PRODUCTION THEREOF AND LIQUID CRYSTAL COMPOSITION COMPRISING THE SAME
DERIVATIVE

PUBN-DATE: September 13, 1994

INVENTOR-INFORMATION:

NAME

COUNTRY

KAWADA, MITSURU

UESUGI, YOSHITAKA

YAMASHITA, TOSHIRO

UCHIUMI, YUUKA

TERAO, HIROSHI

KONDO, KATSUMI

OHARA, SHUICHI

US-CL-CURRENT: 558/426

INT-CL (IPC): C07C 255/47; C07C 253/30; C07C 327/24; C07C 327/26; C07D 239/26; C07D
239/28; C07D 239/34; C07D 239/38; C09K 19/32; C09K 19/34; G02F 1/13

ABSTRACT:

PURPOSE: To obtain a new compound, useful as a component of a liquid crystal composition used for a liquid crystal flat panel display, etc., having high physico-chemical stability and capable of manifesting a stable nematic phase.

CONSTITUTION: This compound is expressed by formula I [R1 is 1-14C alkyl which may be substituted; R2 and R3 are H, halogen, etc.; Q is single bond, ether bond, etc.; rings A and B are expressed by formulas II, III, etc.; X and Y are single bond, methylenoxy bond, etc.; the double line of a solid line and a broken line is single or double bond; (m) and (n) are 0-2, with the proviso that both are not simultaneously 0; at least one of Q and X is single bond when (m) is 0; at least one of X and Y is single bond when (n) is 0], e.g. a compound expressed by formula IV. The compound is obtained by condensing a compound of a skeletal component expressed by formula V with a phenolic compound expressed by formula VI in the presence a condensing agent such as triphenylphosphine. Furthermore, the phenolic compound expressed by formula VI is obtained by using, e.g. 2-cyano-6-methoxy-1-tetralone as a starting raw material.

COPYRIGHT: (C)1994,JPO&Japio